

REMARKS

STATUS OF THE CLAIMS

Claims 1-50 were pending in this application, of which claims 20-37 were withdrawn from consideration. Claims 6, 9, 19-37, and 50 have been cancelled without prejudice. Claims 1 and 38 have been amended.

Claims 1-3, 5-18, 38-39, and 41-50 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 4,663,230 to Tennent.

Claims 4, 40, and 50 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tennent further in view of U.S. Patent No. 6,221,330 to Moy *et al.*

SUPPORT FOR AMENDMENTS TO THE CLAIMS

Claim 1 has been amended to include the term “the catalyst is supported on a powdered oxide substrate having a particle size of 0.5 μm to 5 μm ” to more clearly define Applicant’s invention. Support for the amendment can be found throughout the specification as filed, e.g., claims 6 and 9 as originally filed

Claims 1 and 38 are amended to include the term “the carbon nanostructure is single-walled carbon nanotubes.” Support for the amendment can be found throughout the specification as filed, e.g., claims 19 and 50 as originally filed

To further prosecution, Applicant has cancelled without prejudice claims 6, 9, 19-37, and 50. Applicant reserves the right to file subsequent applications claiming the canceled subject matter. In addition, the claim cancellations should not be construed as abandonment or agreement with the Examiner’s position in the Office Action.

The amendments to the claims therefore add no new matter and entry is respectfully requested.

ELECTION/RESTRICTION REQUIREMENT

Pursuant to the restriction requirement made final and election of claims 1-19, and 38-50, Applicant cancels claims 20-37 with entry of this amendment. Applicant reserves the right to file subsequent applications claiming the canceled subject matter. In addition, the claim cancellations should not be construed as abandonment or agreement with the Examiner's position in the Office Action.

ADDRESSING THE EXAMINER'S REJECTIONS

REJECTIONS UNDER 35 U.S.C. § 103

(a) Claims 1-3, 5-18, 38-39, and 41-50 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tennent. Applicant traverses this ground of rejection by amendment and argument.

Three requirements must be met for a *prima facie* case of obviousness. First, the prior art references must teach all the limitations of the claims. Second, there must be a motivation to modify the reference or combine the teachings to produce the claimed invention. Third, a reasonable expectation of success is required. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The cited reference does not disclose all the elements of the applicants' claims, therefore, a *prima facie* case of obviousness has not been made.

The Examiner acknowledges that Tennent fails to disclose entraining the catalyst in inert gas, but states that it would have been obvious to one of ordinary skill in the art. The applicants disagree. Tennent at column 6, lines 13-20 states that the catalyst is deposited on refractory supports, such as alumina, carbon, quartz, silicates, and aluminum silicates. At column 6, lines 20-22, Tennent states that the refractory supports should be thin films or plates which can be easily moved into and out of the reactor. Tennent thus specifically teaches away from entraining the catalyst in an inert gas by teaching that the catalyst should be supported on a thin film or a plate for ease of removal. Such a supported catalyst is not likely to be entrained in an inert gas, therefore, it would not have been obvious to one of skill in the art to entrain the catalyst in inert gas.

However, in order to advance prosecution, the applicant has amended claim 1 to recite that the catalyst is supported on a powdered oxide substrate having a particle size of 0.5 μm to 5 μm . Further, the applicant has amended the independent claims 1 and 38 to recite that the nanostructure is single-walled carbon nanotubes. Tennent discloses the synthesis of carbon fibril and not single-walled carbon nanotubes. Thus, Tennent does not disclose all the elements of the applicants' claims as amended. Therefore, a prima facie case of obviousness is not made. Withdrawal of this ground of rejection of claims 1-3, 5-18, 38-39, and 41-50 is respectfully requested.

(b) Claims 4, 40, and 50 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tennent further in view of Moy *et al.*

The applicants traverse the rejection as there is no motivation to modify the reference or combine the teachings to produce the claimed invention. Tennent discloses the use of supported catalyst for the synthesis of carbon fibrils. Moy at column 2, lines 65-67 states that "supported metal catalysts are inherently disadvantageous, as the support is necessarily incorporated into the single-walled carbon nanotube formed therefrom." Further, at column 4, lines 4-5, Moy states that their method to form single-walled carbon nanotubes uses unsupported catalysts. Thus, Moy teach away from using the supported catalysts of Tennent to synthesize single-walled carbon nanotubes. Therefore, a skilled artisan would not be motivated to combine Tennent with Moy.

The cited art does not teach or provide a motivation to combine the teachings. Therefore, a prima facie case of obviousness is not made. Withdrawal of this ground of rejection of now pending claims 4 and 40 is respectfully requested.

CONCLUSION

Withdrawal of the pending rejections and reconsideration of the claims are respectfully requested, and a notice of allowance is earnestly solicited. If the Examiner has any questions concerning this Response, the Examiner is invited to telephone Applicants' representative at (650) 335-7818.

Respectfully submitted,
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